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Bezemer, D.J.; Jong-A-Pin, R.

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Democracy, Globalization and Ethnic Violence

Dirk Bezemer* and Richard Jong-A-Pin
University of Groningen

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Abstract

Recent studies suggest that democracy and globalization lead to ethnic hatred and violence in countries with a rich ethnic minority. We examine the thesis by Chua (2003) that democratization and globalization lead to ethnic violence in the presence of a market-dominant minority. We use different data sets to measure market dominant minorities and employ panel fixed effects regressions for a sample of 107 countries over the period 1984-2003. Our model contains two-way and three-way interactions to examine under which conditions democracy and globalization increase violence. We find no evidence for a worldwide Chua effect, but we do find support for Chua's thesis for Sub-Saharan Africa.

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* Corresponding author (d.j.bezemer@rug.nl). We share equal authorship. Postal address: University of Groningen, Faculty of Economics PO Box 800, 9700 AV Groningen, The Netherlands. Phone/ Fax: 0031 - 50 3633799/7337. We thank Torben Rathmann for research assistance and participants of the Institute of Economics and Econometrics Brown Bag Seminar (June 2007) - particularly, Jakob de Haan - for helpful comments. The usual caveat applies.

World on Fire?

Democracy, Globalization and Ethnic Violence

"Economist progress in capitalist society means turmoil."

Joseph Schumpeter (1942)

I. Introduction

Amy Chua's widely read 'World on Fire' (Chua, 2003) suggests that the current globalization and democratization waves are increasing ethnic violence in much of the developing world.[1] While the book was both praised and criticized (see e.g. Glaeser, 2005; Rodrik and Wacziarg, 2005), its claim has not received any support beyond anecdotal evidence.[2] The aim of this paper is to examine the Chua thesis empirically.

The 'Chua thesis' is based on the observation that in many developing countries a small ethnic minority has a large economic advantage over the indigenous majority. Examples are the Chinese in South-east Asia, the Lebanese in West Africa, Indians in East Africa and whites in Latin America. As these minorities live by and benefit from 'the market', Chua aptly labels them 'market-dominant minorities' (MDMs). MDMs typically control large parts of the economy so that globalizing markets favor them disproportionally. In turn, growing inequalities lead to resentment among the majority which, in democratic settings, cannot be contained by repression - or is even stimulated by office-seeking politicians (Glaeser, 2005). Chua's main argument is that such resentment cause a violent backlash against the MDM, against markets and against democracy.

Chua's dismal scenario is particularly relevant given the strong democratization and globalization trends over the last two decades. Never before did so many countries in

[1] See also Chua (1995, 1998, 2000).

[2] Rodrik and Wacziarg (2005) purport to test the 'Chua thesis' and related 'pundits' claims' (Rodrik and Wacziarg, 2005:50) but actually analyze whether transitions to democracy affect economic growth. We instead examine whether (the concurrence of) globalization and democracy affects ethnic violence levels, as claimed by Chua.

so few years switch from authoritarian to democratic polities (Jensen and Paldam, 2006). Furthermore, the second globalization wave gathered pace at a rate and scale which outranks the world's first globalization era from the 1890s to the 1920s (Baldwin and Martin, 1999). While existing evidence suggests that both democracy and globalization tend to decrease conflict between countries (O'Neal and Russet, 2000), their relationship with internal conflict is less clear (Sambanis, 2002). Chua (2003) argues that where MDMs are present, the combination of democracy and globalization constitutes a combustible mix.

We examine the Chua thesis for a panel of 107 countries over the period 1984-2003. Our measure for the presence of an MDM is taken from the Minorities at Risk project (MAR, 2005), which we compare with an analysis based on a data set distilled from Chua (2003). We employ a fixed-effects panel estimator to focus on the variation of ethnic violence within countries. Our empirical framework includes two-way and three-way interaction effects to examine whether globalization and democracy affect ethnic violence in MDM countries.

Previewing our results, we find partial but not global support for a Chua effect. In the full sample, neither democracy, nor globalization, nor a combination of both increase ethnic violence in MDM countries, defying a Chua effect. Instead, the results suggest that they do increase ethnic violence in *non*-MDM countries. However, if we include only Sub-Saharan African countries in the analysis, we do find strong evidence for a Chua effect. These findings survive a range of specification and robustness checks.

The remainder of this paper is organized as follows. In the next section we discuss the 'Chua thesis' and relate it to the literature on civil conflict. In section III we present the data and our empirical framework. In Section IV we present our findings, while in section V we perform various sensitivity analyses and robustness checks. We conclude by reflecting on the merits and shortcomings of our study in section VI and suggest avenues for future research.

II. The 'Chua thesis' and related literature

Chua argues that outbursts of ethnic violence in countries with an MDM result from the concurrence of democratization and globalization (Chua, 2003, p.16): *"In the numerous countries around the world that have pervasive poverty and a market-dominant minority, democracy and markets – at least in the form in which they are currently being promoted – can proceed only in deep tension with each other. In such conditions, the combined pursuit of free markets and democratization has repeatedly catalyzed ethnic conflict in highly predictable ways, with catastrophic consequences, including genocidal violence and the subversion of markets and democracy themselves. This has been the sobering lesson of globalization over the last twenty years.*"

Her claim is illustrated with many case studies. One example is the position of the Chinese in Indonesia. With just 3 percent of Indonesia's 200 million population, they are estimated to control around 70 percent of the private economy and - although not all rich – they are 'economically dominant at every level of society' (Chua, 2003:43). While Indonesia's extraordinary economic growth of the 1980s and 1990s increased average incomes for all, the general perception among indigenous Indonesians was that it favored the Chinese disproportionally. They were seen as accumulating immense wealth supported by their ties to the Suharto regime. This massive, widespread hostility was suppressed by the regime but erupted after Indonesia became more democratic. Anti-Chinese violence broke out in all the country's major cities throughout 1998 (Chua, 2003:45). This episode illustrates the Chua thesis well: Indonesia's sequence of abundant globalization and growth followed by tentative democratization proved highly dangerous to its market-dominant minority.

Two arguments underpin the 'Chua thesis'.[3] The first is that globalization and free markets breed domestic inequality along ethnic lines. The empirical evidence supports the view that globalization has been increasing domestic income inequality over the last thirty years (Goldberg and Pavcnik, 2007). A second argument is that the introduction of democracy in countries with an MDM leads to ethnic hatred and, ultimately, ethnic violence. This relationship is studied by Glaeser (2005), who develops a model in which

[3] One way to view the 'Chua thesis' is as a contemporary version of Huntington's (1968) early work. He argued that resentment by those left behind in an economic growth episode would cause political instability unless restraining (often repressive) institutions were in place. Chua´s conjecture is more specific in that it posits that economically powerful ethnic minorities unwillingly act as focal points of resentment and attractors of violence.

politicians may have electoral motives to spread hatred against a rich minority. The willingness of rational voters to believe hate-creating stories depends on their incentives to learn about the truth. Incentives are weak particularly if there are high costs of interacting with the minority (due to, for instance, language or cultural differences) or low returns of interacting. Chua's emphasis on the MDM being an ethnic group and active in (typically commercial and financial) sectors not normally accessed by the majority of the population (which is employed in agriculture) naturally fits in with this model.

There is a already a large body of evidence on the determinants of civil conflict and instability – especially for Sub-Saharan Africa.[4] Studies that examine the role of ethnic diversity are e.g. Easterly and Levine (1997), Collier (2001) and Elbadawi and Sambanis (2000). Furthermore, the effect of (changes in) democracy is studied by Sambanis (2001), Elbadawi and Sambanis (2002) and Hegre et al. (2001). Finally, Hegre et al. (2003) and Elbadawi and Hegre (2003) investigate whether globalization is related to conflict.[5] Although some of these studies explore some interactions between different explanatory variables, the hypothesis by Chua (2003) has not been empirically examined.

III. Method and Data

To examine whether (the combination of) democracy and globalization affect(s) ethnic violence, we employ a panel data model with country and time specific fixed effects.[6] Time specific effects capture all variation in the data specific to some year, while country fixed effects are included to take account of all characteristics specific to each individual country (e.g., the degree of ethnic fractionalization or the institutional framework). As Chua's thesis prescribes that democracy and globalization spark ethnic violence especially in MDM countries, we include two-way and three-way interaction effects to test her hypothesis. Our baseline model specification is:

[4] A complete review can be found in Sambanis (2002).
[5] Other studies that examine the impact of economic variables are Collier and Hoeffler (2002), Fearon and Laitin (2003) and Miguel et al. (2004).
[6] The inclusion of both country and time specific effects is based on different statistical tests. Hausman tests reject the null-hypothesis that the estimates of the fixed effects model are equal to the estimates of a random effects model. F-tests reject the null-hypotheses that all country and time specific effects are zero.

$$y_{it} = \alpha + \mu_i + \gamma_t + \beta_1 GL_{it} + \beta_2 DEM_{it} + \beta_3 MDM_i * GL_{it} + \beta_4 MDM_i * DEM_{it} + \beta_5 DEM_{it} * GL_{it} + \beta_6 MDM_i * DEM_{it} * GL_{it} + \beta_7 X_{it} + \varepsilon_{it}$$

where y_{it} is the dependent variable measuring violence resulting from ethnic tensions in country *i* in year *t*. α is a constant term, μ_i denotes the country fixed effect of country *i* , γ_t is the time specific effect of year *t*. GL_{it} is an indicator measuring the degree of globalization in country *i* in year *t*. DEM_{it} refers to our measure of democracy for country *i* in year *t*. MDM_i denotes our dummy for a market dominant minority. The vector *X* contains a set of control variables suggested in previous studies on the determinants of civil conflict. In the remainder of this section we discuss our data in more detail.

Chua (2003, p.6) defines an MDM as *"an ethnic minority, who for widely varying reasons, tend under market conditions to dominate economically, often to a startling extent, the "indigenous" majorities around them."* An important aspect of this definition is ethnicity. According to Chua (2003, p. 14), ethnicity *".. refer[s] to a kind of group identification, a sense of belonging to a people, that is experienced "as a greatly extended form of kinship." This definition of ethnicity is intended to be very broad, acknowledging the importance of subjective perceptions. It encompasses differences along racial lines, …, lines of geographic origin, …, as well as linguistic, religious, tribal, or other cultural lines."*

Chua (2003) classifies 53 countries with an MDM and 45 countries without MDM. We list them in Appendix A. A drawback of the classification provided by Chua (2003) is that it is not clear whether a consistent MDM definition across country case studies is used. A second drawback is that Chua's sample is based on unclear selection criteria. An analysis only on the basis of this classification might, therefore, be driven by a confirmation bias. Since these limitations preclude further data set expansion and call into question the validity of the data distilled from Chua (2003), we do not solely rely on this classification, but also consider an alternative source: the Minorities at Risk data set (MAR, 2005).

The MAR project reports on the status of ethnic minorities within nation states. These are defined as ethno-political groups that collectively suffer or benefit from

systematic discriminatory treatment vis-à-vis other groups in a society; and/or collectively mobilize in defense or promotion of their self-defined interests. A minority is included in the data set if the country in which they reside has a population greater than 500.000 and the minority has a population of at least 100.000 or one percent of the total population.

From this source we use the variable *ecdifxx*, which purports to measure the "economic difference between individual minority groups relative to the majority".[7] The variable *ecdifxx* is scaled from -2 (very advantageous position of the minority) to + 4 (very disadvantageous position of the minority). The economic position of a minority is assessed over six dimensions: income level, ownership of land and other property, incidence of higher education and presence in commerce, the professions and official positions). For our purpose, we construct a dummy variable (labelled *'MDM')* equal to one when there is at least one minority group within a country with an economically advantageous position (*ecdifxx<0*), and zero otherwise. Using this definition, there are 37 countries with an MDM and 118 without an MDM. Country classifications according to the MAR data are listed in Appendix B. In table 1 we compare the classification distilled from Chua (2003) with the *MDM* variable from the MAR data.

[insert table 1 here]

The two MDM sources are similar but with noteworthy differences. They agree in 66 out of 98 cases (67%): in 44 cases both Chua (2003) and MAR indicate no MDM, while in 22 cases both indicate the presence of an MDM[8]. But there are 31 MDMs in the Chua (2003) data not identified by the MAR data. Conversely, the MAR data identify the Berbers in Algeria to be market-dominant, but according to Chua (2003, p. 213) Algeria has no MDM. Since the MAR data set covers more countries than the Chua study and

[7] See Minorites at Risk Project codebook (2005).
[8] It should be noted that the consistency between the two classifications increases to 75% if all Latin American countries are excluded. Latin America's economic elites tend to be of lighter skin (it is a 'pigmentocracy'), but their ethnic affiliation is unclear and they are mostly not listed as a minority in the MAR data. Another reason why the two sources differ is the size restriction included in the MAR criteria, while Chua (2003) also refers to very small groups that are economically dominant

uses transparent and consistent definitions, we use it in our main analysis below. To probe the robustness of our results, we also use the Chua (2003) data.

It is important to note here that the presence of an MDM is different from ethnic fractionalization, usually defined as the probability that two randomly selected individuals from a population belong to different groups (e.g. Alesina et. al, 2003). Even when fractionalization scores are low MDMs can be present, as in the case of Russia where a small number of tycoons of Jewish origin dominate economically (Chua, 2003). Conversely, the Central African Republic has no MDM, but scores high on all fractionalization measures.[9] Moreover, MDMs are defined by ethnicity in general, while fractionalization measures differentiate between race, religion and language. The correlation coefficients in table 2 illustrate the difference between ethnic fractionalization and the concept of a market-dominant minority.[10]

[Insert table 2 here]

Our main democracy indicator is the widely used '*polity2*' variable from the Polity IV project (Marshall and Jaggers, 2002). This variable ranges from -10 (very autocratic) to +10 (very democratic). As there are many different democracy indicators available in the literature (de Haan, 2007), we run auxiliary regressions with alternative democracy indicators to test the robustness of our results. These alternatives include the Gastil index, which is based on the level of political rights and civil liberties (Freedom House, 2006), and several 'democracy' dummies. The first is taken from Przeworski et al. (2000), who define a democracy as a regime that holds elections in which the opposition has some chance of winning and taking office. The second dummy is due to Vanhanen (2000), who defines democracies by a minimum level of political competition and electoral participation.[11]

[9] The fractionalization scores for Russia and the Central African Republic (within brackets) are: ethnic fractionalization 0.25 (0.83), religious fractionalization 0.25 (0.83), language fractionalization 0.44 (0.79).
[10] Furthermore, it also important to note that our MDM measure is different from the "ethnic dominance" variable as used by e.g. Collier (2001). "Ethnic dominance" refers to situations in which one ethnic group outnumbers other ethnic groups.
[11] More specifically, democracies are polities in which at least 10% of the electorate votes and the largest political party receives not more than 70% of the votes.

To proxy globalization, we use in our main analysis the KOF globalization index (Dreher, 2006), which is an aggregate index of economic, political and social globalization. We will also use its constitutive components in our robustness analysis.

To the best of our knowledge, there exists no source providing information on incidences (and intensity) of ethnic violence. Therefore, we use the International Country Risk Guide (ICRG, 2005) assessments of internal conflicts and ethnic tensions as a proxy for ethnic violence. The variable "internal conflicts" (scaled from 0 to 6) assesses political violence and is based on the occurrence of civil war, the threat of a *coup d'etat*, the incidence of terrorist acts and the extent of civil disorder in a country. The variable "ethnic tension" ranges from 0 to 12 and is an assessment of the degree of tension within a country attributable to racial, nationality, or language divisions.[12]

Arguably, "internal conflicts" and" "ethnic tensions" are incomplete measures for ethnic violence. "Internal conflicts" may well capture more than only violence resulting from ethnic hatred. Conversely, ethnic tensions may not result in actual violence. A scatter plot of the two variables confirms that, in general, countries with severe ethnic tensions have more internal conflict, but also that the correlation is far from perfect. To proxy ethnic violence we therefore use the product of "ethnic tensions" and "internal conflicts" as our dependent variable.

[Insert figure 1 here]

Although the ICRG data appear suitable, it is conceivable that these country assessments are biased. For example, a country with an MDM (or any other country characteristic) might receive *a priori* a higher score on ethnic tensions even though such tensions might not be present. To account for such a potential bias, we use fixed effects regressions to focus on the within variation of the data. Furthermore, it is possible that country assessments are influenced by a country's past violence experience. To examine this possibility, it is necessary to differentiate between the potential bias in country assessments and the persistence in ethnic violence. Therefore, we regress the ethnic

[12] In the ICRG data, higher values indicate lower levels of internal conflicts and ethnic tension, respectively. In our analysis, we multiplied each variable by -1 such that higher values imply higher level of conflict (or/and ethnic tension).

conflict variable on several objective violence indicators (also interacted with the ethnic fractionalization index of Alesina et al. (2003)) and compare it with a model that also include lags of the explanatory variables[13] The r-squared values of both models are 0.80, which supports the view that additional lagged explanatory variables do not contribute much to current assessments of ethnic violence. Appendix C provides descriptive statistics of our data.

IV. Estimation results

Baseline estimation results are shown in table 3. In columns 1-3 we sequentially examine the one-way, two-way and three-way interaction effects of MDMs, democracy and globalization on ethnic violence using the MAR data as our MDM variable. In columns 4-6 we follow the same procedure, but use the classification of Chua (2003).

[insert table 3 here]

The results using the classification of MAR and those obtained with the Chua data (2003) are very similar. In the first (and fourth) specification the coefficient on the level of democracy is insignificant, but all variables in specification 2-3 (and 5-6) are highly significant, with the exception of globalization in models (3) and (5).[14] This implies that the effects of globalization and democracy are non-linear and interaction effects are present in the data. However, table 3 does not yet allow us to evaluate the implications of the Chua thesis; the estimated coefficients (and their standard errors) in interaction analysis are meaningless and have to be evaluated conditional on the other interacted variables, by calculating appropriate marginal effects (see Brambor et al, 2006). Before

[13] These explanatory variables are based on actual incidences of violence and include: a civil war dummy (Gleditsch et al. 2002 and updates), dummies indicating the presence of small communal conflict and medium communal conflict (Gleditsch et al. 2002 and updates), the number of guerrilla warfare attacks in a country, political revolutions, political assassinations and coups d'etat in a country (Banks 2005) and the number of deadly terrorist attacks in a country (MIPT, 2004).

[14] We also ran the same regressions using 'ethnic tensions' and 'internal conflicts' as our dependent variable. The results of these regressions, which are available on request, were nearly identical to the results we present in tables 6 and 7 and therefore we use only the aggregate indicator in the remainder of the analysis.

we do so, we first account for a potential omitted variable bias by including different control variables that have been suggested in the literature. The results are shown in table 4.

[insert table 4 here]

In columns 1-4 we add several economic variables to our model, i.e., GDP per capita, real GDP growth, the unemployment rate and inflation (all variables are taken from the World Bank Development Indicators, 2005). Confirming earlier findings of the literature, we find that lower income, lower income growth and higher unemployment are significantly related to more ethnic violence. But, more importantly, the sign and significance of the variables of interest are unchanged. In column 5 we include a measure of wage inequality from the University of Texas Inequality Project (UTIP, 2006), but its impact is insignificant. Next, we include a measure of corruption (ICRG, 2005) in the model as a proxy for weak governance. Although we focus on the within variation of the data, we find that this variable is highly significant. Finally, we examine whether ethnic violence is affected by regional ethnic conflicts. To do so, we follow the approach of Ades and Chua (1997), who construct an index for regional political instability. This index is a (weighted) average of the instability observed in country *i*'s neighbouring countries. In our case, we calculate this index for country *i* in year *t* on the basis of the ethnic violence scores observed in the neighbouring countries. The results shown in column 7 indicate that regional ethnic violence is strongly related to domestic ethnic violence. In column 8 we add all significant control variables to the model. Unemployment and economic growth are now insignificant. Therefore, we exclude them in column 9, which is our preferred specification.[15] We repeat this procedure using the MDM classification of Chua (2003). The last column shows the results of model specification 9, but now with the Chua (2003) MDM variable. It is (again) clear that the results are insensitive to the choice of MDM variable.

[15] We have also done a general to specific model selection procedure in which we dropped the least significant variable until only significant variables remained. The outcome is identical to specification 9.

To interpret our results, we plot the marginal effects (and their 95% confidence intervals) of democracy and globalization for MDM countries and non-MDM countries in figures 2 and 3, respectively.[16]

[Insert figures 2 and 3 here]

Figures 2a and 2b show that in MDM countries, democracy and globalization are not significantly related to ethnic violence. The effects of both variables do not depend on each other. In figure 3a and 3b the same plots are depicted, but now for non-MDM countries. As figure 3a shows, we now do find an interaction effect between globalization and democracy. Specifically, democracy increases ethnic violence once a country has a relatively high level of globalization. Again, we find largely no effect of globalization on ethnic violence – only for very autocratic countries globalization is just significant. On the basis of these results, we find no support for the Chua thesis.

V. Robustness Analysis

We subject our analysis to a large number of additional robustness and specification checks.[17] First, we replace our democracy and globalization indices by a number of alternative measures. That is, we substitute the polity2 index with the measures of Vanhanen (2000), Przeworski et al. (2000) and the Freedomhouse (2006) and we replace the globalization index by the disaggregated measures (economic, political and social globalization) of globalization of Dreher (2006). None of these changes affects our results. Secondly, we consider an alternative approach to measure ethnic violence. We regard ethnic violence as a latent concept and use factor analysis on a number of violence

[16] The figures are based on the results of column 9, table 4.

[17] As explained in the previous section, the estimation results can only be interpreted conditional on the other covariates. Therefore, we opt not to present a table with estimation results. Furthermore, we only show the marginal effect plots when the alternative estimation results are substantially different from the results of figure 2a and 2b. All results are available on request.

indicators as well as the individual ICRG measures.[18] The correlation between our preferred index and the factor score is 0.77. Our results are unaffected.[19]

Theoretically, it is possible that our results suffer from attrition bias, i.e., a number of ethnically divided countries (e.g. Yugoslavia) dropped from the sample and have become ethnically more homogenous countries (e.g. Slovenia). If we focus on a sample of countries for which we have data throughout the entire time period (89 countries, N=1708), we find that attrition bias is not driving our results.

We further examine the robustness of our results using alternative estimation techniques. First, we employ panel corrected and autocorrelated standard errors to account for possible time dependency in the data. Next, we estimate the model using a different robust estimators. We use the robust regression routine of Stata 9.2, which is based on iteratively least squares (Huber and Tukey bi-weight functions). Furthermore, we also use the Least Trimmed Squares estimator by Rousseeuw (1985). We conclude that our results are not driven by time dependence or outliers in the data.

We also estimate the model for different sub-samples to explore sample heterogeneity. First, we focus on a sub-sample in which we exclude all OECD countries, since these countries have been almost always stable democracies and (apart from Mexico) do not have an MDM. Omission of these countries does not affect our results. Next, we focus only on Sub-Saharan African countries as this continent is most often associated with ethnic disparities. As shown in figures 4 and 5, the results do change for Sub-Saharan Africa. Figure a shows that democracy increases ethnic violence in MDM countries and the effect is larger for high levels of globalization. In addition, globalization decreases ethnic violence in autocratic countries, but the effect becomes positive (but insignificant) for higher values of democracy. We find the opposite effect of democracy in non MDM countries (figure 5a), i.e., democracy decreases ethnic violence in these countries – especially for high levels of globalization. Finally, figure 5b shows

[18] Besides the ICRG assessments, we used the same violence indicators as mentioned in section 3. See footnote 13.

[19] We also run the analysis using (only) the civil war dummy as dependent variable. Again the results were very similar to our main results.

that in non MDM countries globalization increases ethnic violence. The results for Sub-Saharan Africa largely support the Chua thesis.[20]

VI. Concluding Remarks

Why have many developing countries witnessed outbreaks of excessive ethnic violence? Chua (2003) suggested the root cause is the concurrence of globalizing markets and increasing democracy in countries where a small ethnic minority economically dominates the indigenous majority. In this paper we empirically examine the Chua thesis.

This paper contributes to the literature in two ways. First, in Chua's thesis, a crucial role is devoted to market-dominant minorities. We use different sources to identify these minorities and find that there are substantial differences with conventional measures of ethnic fractionalization. Our second contribution is that we focus on the interaction of ethnic differences, democracy and globalization. This contrasts the existing literature which has mainly focused on the direct impact of these variables.

On the basis of our empirical analysis we conclude that there is no evidence for a worldwide Chua effect. However, when we focus on the region which is currently most infamous for its ethnic violence, we do find strong evidence. In Sub-Saharan Africa, democracy sparks ethnic conflict and the effect increases as countries in the region are more globalized. Importantly, we find that democracy decreases ethnic conflict when market-dominant minorities are absent. We conclude that these market dominant minorities are the crucial moderators responsible for the combustible effect of democracy plus globalization in Sub-Saharan Africa. The question why this region is different from the rest of the world is left for further research.

Another finding is that the combination of democracy and globalization does robustly increase ethnic violence in countries without a market-dominant minorities. This suggests that Chua was right for the wrong reasons. "Exporting democracy and free markets" indeed "breeds ethnic hatred" (as the subtitle of Chua (2003) states), but market-dominant minorities are not a sufficient nor a necessary condition.

[20] Using the same robustness checks as discussed earlier in this section, the results for the Sub-Saharan sub-sample turn out to be robust.

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Tables and Figures

Table 1. Cross tabular of MDM classification Chua (2003) with MAR (2005) data.

	Chua (2003)			
	MDM	**no**	**yes**	**Total**
MAR (2005)	**no**	44	31	75
	yes	1	22	23
	Total	45	53	98

Sources: Chua (2003), Minorities at Risk project (2005).

Table 2. Correlation coefficients between MDM and fractionalization measures.

	MDM MAR (2005)	MDM Chua (2003)
Ethnic fractionalization	0,27	0,51
Religious fractionalization	0,22	0,14
Language fractionalization	0,32	0,46
N	149	95

Sources: Chua (2003), Minorities at Risk project and Alesina et. al (2003).

Table 3. Estimation results baseline model.

Dependent variable: ethnic violence	(1)	(2)	(3)	(4)	(5)	(6)
MDM variable:	MAR	MAR	MAR	Chua	Chua	Chua
GL	10.514	3.895	1.417	11.882	2.826	-4.655
	(7.64)***	(2.18)**	(0.76)	(7.57)***	(1.41)	(2.10)**
DEM	0.021	-1.354	-1.746	0.135	-2.485	-3.786
	(0.28)	(7.01)***	(7.97)***	(1.41)	(7.72)***	(10.59)***
MDM*GL		-10.723	-7.288		-4.511	4.506
		(5.66)***	(3.75)***		(2.75)***	(2.18)**
DEM*GL		0.679	0.962		0.875	1.721
		(6.23)***	(7.49)***		(7.78)***	(11.05)***
MDM*DEM		1.282	2.877		1.579	3.692
		(9.67)***	(9.49)***		(5.71)***	(9.01)***
MDM*DEM*GL			-1.164			-1.411
			(5.94)***			(6.86)***
Observations	1991	1991	1991	1563	1563	1563
Countries	107	107	107	80	80	80
R-squared	0.33	0.37	0.38	0.30	0.35	0.36
F-test country fixed effects, prob > F	0.00	0.00	0.00	0.00	0.00	0.00
F-test time fixed effects, prob > F	0.00	0.00	0.00	0.00	0.00	0.00
Ramsey Reset test prob > F	0.45	0.07	0.14	0.83	0.33	0.95

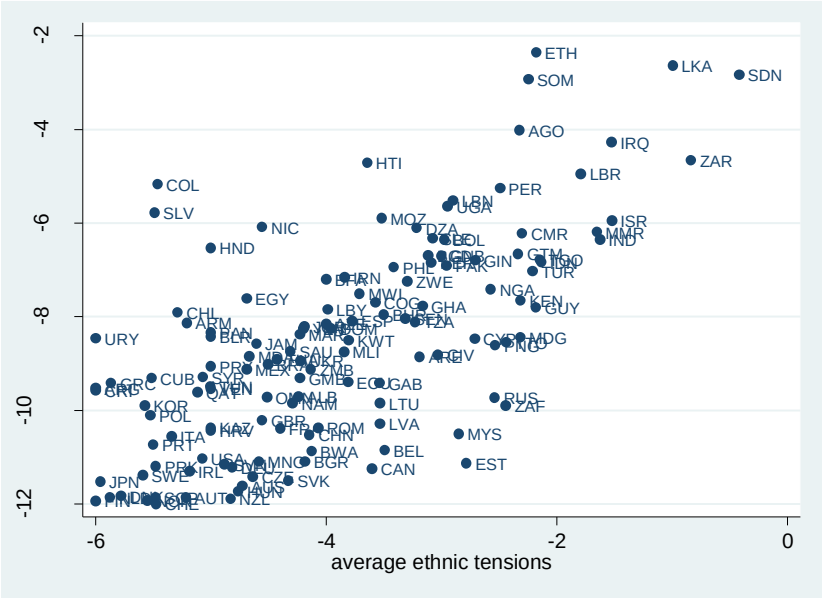
Robust t-statistics in parentheses. All regressions include a constant and country and time specific effects (not shown).
* significant at 10%; ** significant at 5%; *** significant at 1%. GL is the globalization variable. DEM refers to the democracy measure and MDM is the market-dominant minority dummy.

Table 4. Estimation results with additional control variables.

Dependent variable: ethnic violence	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
MDM variable:	MAR	MAR	MAR	MAR	MAR	MAR	MAR	MAR	MAR	chua
GL	4.178	0.996	1.367	1.117	5.940	0.912	1.577	2.799	2.906	0.009
	(2.19)**	(0.54)	(0.46)	(0.60)	(2.06)**	(0.47)	(0.86)	(0.89)	(1.51)	(0.00)
DEM	-1.915	-1.754	-2.241	-1.760	-2.760	-1.722	-1.413	-1.602	-1.578	-2.614
	(8.63)***	(8.02)***	(5.83)***	(8.06)***	(8.24)***	(7.25)***	(6.53)***	(3.59)***	(6.79)***	(6.65)***
MDM*GL	-7.408	-6.882	-13.982	-6.799	-16.829	-7.594	-6.839	-12.685	-6.659	2.874
	(3.80)***	(3.53)***	(4.48)***	(3.47)***	(3.61)***	(3.75)***	(3.48)***	(3.87)***	(3.21)***	(1.30)
MDM*DEM	2.701	2.864	1.861	2.895	5.740	3.133	2.171	2.146	2.269	2.355
	(8.95)***	(9.43)***	(2.36)**	(9.54)***	(6.04)***	(9.84)***	(6.77)***	(2.62)***	(6.84)***	(5.38)***
DEM*GL	1.049	1.022	1.092	1.022	1.398	1.012	0.765	0.796	0.920	1.319
	(7.87)***	(7.93)***	(5.21)***	(7.96)***	(7.25)***	(7.48)***	(5.88)***	(3.31)***	(6.74)***	(7.13)***
MDM*DEM*GL	-1.057	-1.214	-0.667	-1.238	-2.710	-1.330	-0.781	-0.824	-0.857	-0.834
	(5.25)***	(6.18)***	(1.45)	(6.29)***	(4.09)***	(6.31)***	(3.78)***	(1.77)*	(3.82)***	(3.73)***
ln(GDP per capita)	-16.514							-11.753	-15.885	-16.549
	(8.88)***							(3.37)***	(7.60)***	(6.59)***
Real GDP growth		-0.106						-0.073		
		(1.75)*						(0.80)		
Unemployment			0.464					0.147		
			(3.88)***					(1.22)		
Inflation				0.000						
				(1.29)						
Wage Inequality					-3.441					
					(0.29)					
Corruption						1.541		1.519	1.654	1.619
						(8.08)***		(5.81)***	(8.87)***	(7.28)***
Regional ethnic violence							0.269	0.182	0.269	0.248
							(8.70)***	(4.49)***	(8.88)***	(6.97)***
Observations	1957	1972	1173	1975	1026	1956	1991	1163	1922	1515
Countries	106	107	94	107	95	107	107	94	106	79
R-squared	0.40	0.38	0.37	0.38	0.47	0.41	0.40	0.41	0.45	0.43
F-test fixed country effects, prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F-test fixed time effects, prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ramsey Reset test, prob >F	0.61	0.14	0.34	0.37	0.72	0.15	0.31	0.24	0.82	0.29

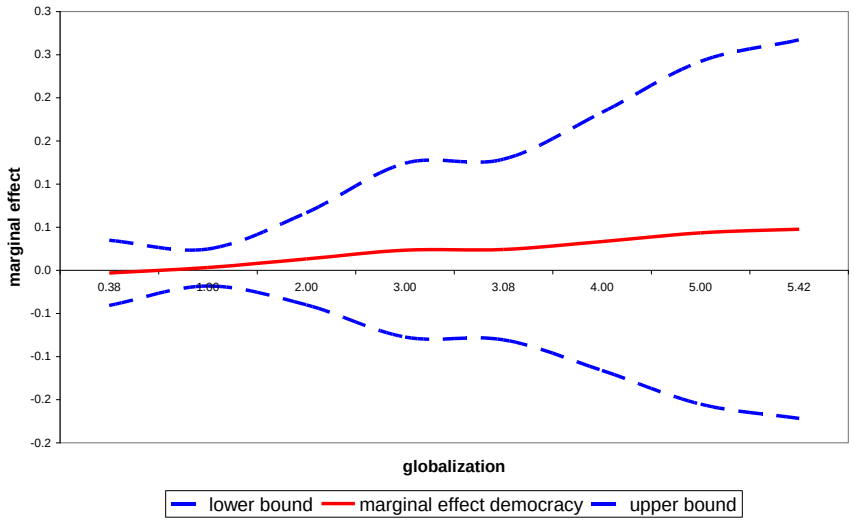
Robust t-statistics in parentheses. All regressions include a constant and country and time specific effects (not shown). GL is the globalization variable. DEM refers to the democracy measure and MDM is the market-dominant minority dummy.
* significant at 10%; ** significant at 5%; *** significant at 1%

Figure 1. Relationship (scatterplot) between internal conflict and ethnic tensions, 1984-2003



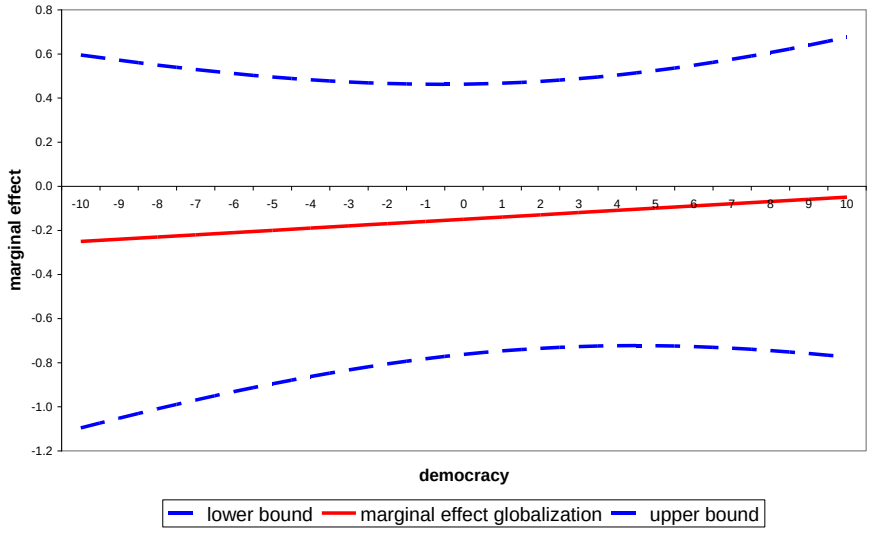
Source: International Country Risk Guide (2005). Depicted are the average internal conflict scores and average ethnic tension scores. The period under consideration is 1984-2003.

Figure 2a. Marginal effect on ethnic violence of democracy in MDM countries.



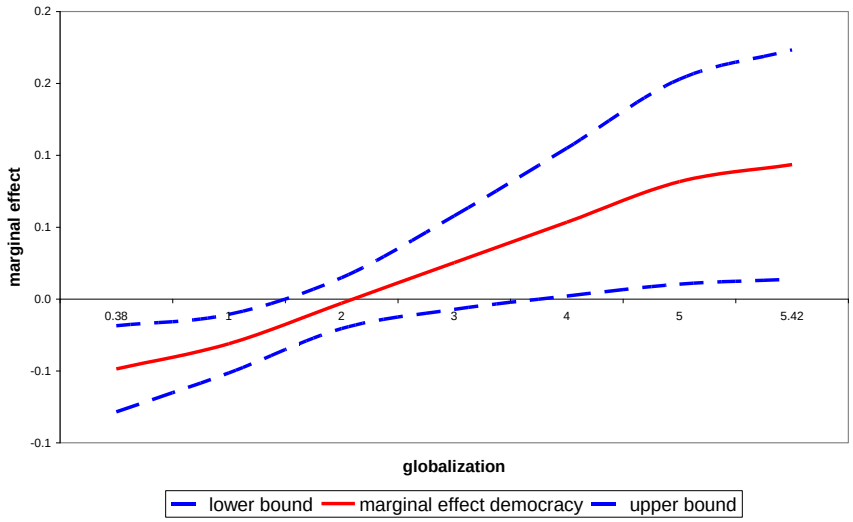
Note: The point estimates are calculated on the basis of model 9 in table 4. The lower and upper bound give the 95% confidence interval.

Figure 2b. Marginal effect on ethnic violence of globalization in MDM countries.



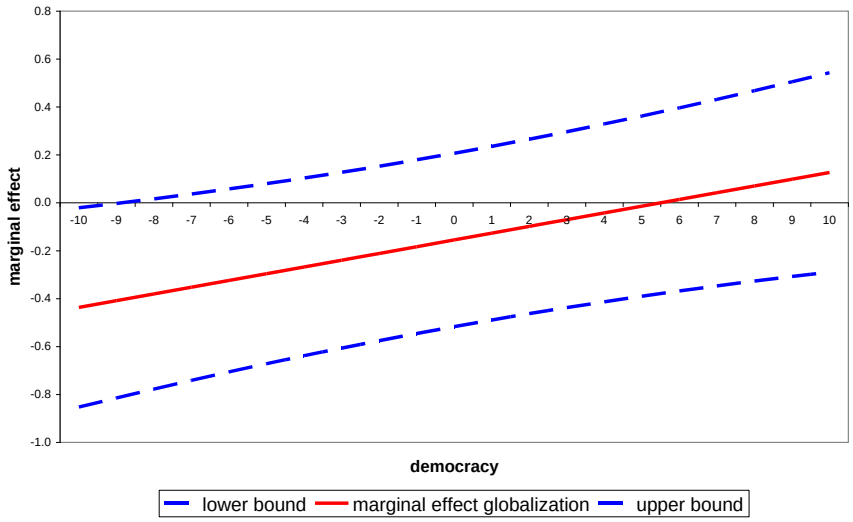
Note: The point estimates are calculated on the basis of model 9 in table 4. The lower and upper bound give the 95% confidence interval.

Figure 3a. Marginal effect on ethnic violence of democracy in non- MDM countries.



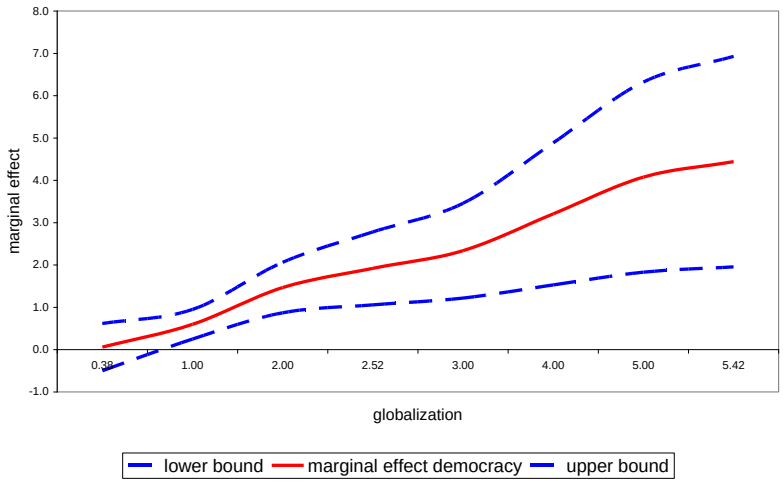
Note: The point estimates are calculated on the basis of model 9 in table 4. The lower and upper bound give the 95% confidence interval.

Figure 3b. Marginal effect on ethnic violence of globalization in non- MDM countries.



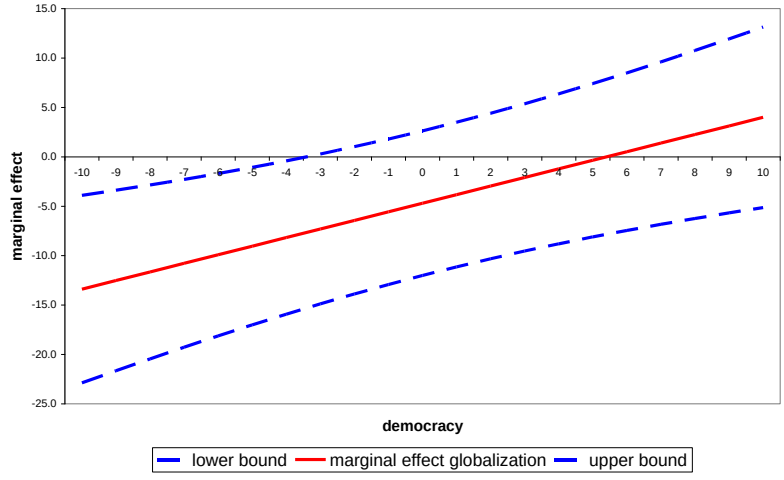
Note: The point estimates are calculated on the basis of model 9 in table 4. The lower and upper bound give the 95% confidence interval.

Figure 4a. Marginal effect on ethnic violence of democracy in Sub-Saharan African MDM countries.



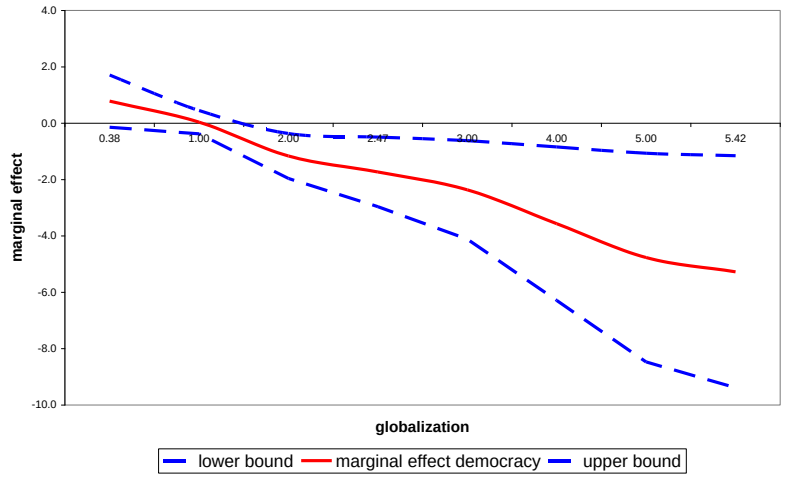
Note: The point estimates are calculated on the basis of model specification 9 in table 4 – for a sample of only Sub-Saharan African countries. The lower and upper bound give the 95% confidence interval.

Figure 4b. Marginal effect on ethnic violence of globalization in Sub-Saharan African MDM countries.



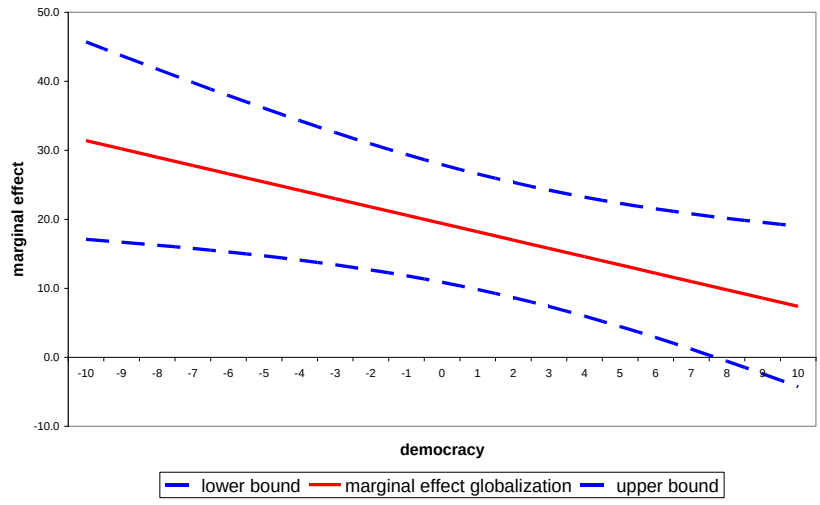
Note: The point estimates are calculated on the basis of model specification 9 in table 4 – for a sample of only Sub-Saharan African countries. The lower and upper bound give the 95% confidence interval.

Figure 5a. Marginal effect on ethnic violence of democracy in Sub-Saharan African non-MDM countries.



Note: The point estimates are calculated on the basis of model specification 9 in table 4 – for a sample of only Sub-Saharan African countries. The lower and upper bound give the 95% confidence interval.

Figure 5b. Marginal effect on ethnic violence of globalization in Sub-Saharan African non-MDM countries.



Note: The point estimates are calculated on the basis of model specification 9 in table 4 – for a sample of only Sub-Saharan African countries. The lower and upper bound give the 95% confidence interval.

Appendix A. Countries with and without MDM according to Chua (2003)

wdi	Countries with	MDM	wdi	Countries without
BDI	Burundi	Tutsi	ARE	UAE
BEN	Benin	Lebanese	ARG	Argentina
BFA	Burkina Faso	Lebanese	AUS	Australia
BHR	Bahrain	Sunni	AUT	Austria
BOL	Bolivia	Whites	BEL	Belgium
BRA	Brazil	Whites	BWA	Botswana
CIV	Cote d`Ivoire	Lebanese	CAN	Canada
CMR	Cameroon	Bamiléké	CHE	Switzerland
COL	Colombia	"foreign born"	CHL	Chile
CRI	Costa Rica	Whites	CHN	China
ECU	Ecuador	Whites	DEU	Germany
ETH	Ethiopia	Eritreans	DNK	Denmark
FJI	Fiji	Indians	DZA	Algeria
GHA	Ghana	Lebanese	EGY	Egypt
GIN	Guinea	Lebanese, Susu	ESP	Spain
GMB	Gambia, The	Lebanese	FIN	Finland
GNB	Guinea-Bissau	Lebanese	FRA	France
GTM	Guatemala	Whites	GBR	United Kingdom
HUN	Hungary	Jews	GRC	Greece
IDN	Indonesia	Chinese	IND	India
IRQ	Iraq	Sunni, Bahat	IRL	Ireland
KEN	Kenya	Whites, Indians,	IRN	Iran
KHM	Cambodia	Chinese	ITA	Italy
LAO	Laos	Chinese	JOR	Jordan
LBN	Lebanon	Christians	JPN	Japan
LBR	Liberia	Lebanese	KOR	Korea, Republic of
LTU	Lithuania	Jews	KWT	Kuwait
MEX	Mexico	Whites	LBY	Libya
MLI	Mali	Lebanese	LKA	Sri Lanka
MMR	Myanmar (Burma)	Chinese	MAR	Morocco
MYS	Malaysia	Chinese	NLD	Netherlands
NAM	Namibia	Whites	NOR	Norway
NER	Niger	Lebanese	NZL	New Zealand
NGA	Nigeria	Ibo, Lebanese	OMN	Oman
PAK	Pakistan	Mohadjir	PRT	Portugal
PAN	Panama	Jews	QAT	Qatar
PER	Peru	Whites	SAU	Saudi Arabia
PHL	Philippines	Chinese	SDN	Sudan
POL	Poland	Jews	SGP	Singapore
PRY	Paraguay	Whites	SWE	Sweden
RUS	Russia	Jews	TUN	Tunisia
RWA	Rwanda	Tutsi	TUR	Turkey
SEN	Senegal	Lebanese	URY	Uruguay
SLE	Sierra Leone	Lebanese	USA	United States
SYR	Syria	Alowyte	YEM	Yemen
TGO	Togo	Lebanese, Ewe		
THA	Thailand	Chinese		
TZA	Tanzania	Indians, Chagga		
UGA	Uganda	Indians, Baganda		
VEN	Venezuela	Whites		
ZAF	South Africa	Whites		
ZMB	Zambia	Indians		
ZWE	Zimbabwe	Whites		

Source: Chua (2003).

Appendix B. Countries with and without MDM according to MAR (2005)

wdi	Countries with MDM	MDM
AZE	Azerbaijan	Armenians, Russians
BDI	Burundi	Tutsi
BLR	Belarus	Russians
CMR	Cameroon	Bamileke
COG	Congo, Republic of	Lari
DZA	Algeria	Berbers
EST	Estonia	Russians
FJI	Fiji	East Indians
GEO	Georgia	Abkhazaians, Adzhars, Russians
GHA	Ghana	Ewe
GIN	Guinea	Susu
GUY	Guyana	East Indians
IDN	Indonesia	Chinese
IRQ	Iraq	Kurds, Sunnis
KAZ	Kazakhstan	Russians
KEN	Kenya	Kalenjins
KGZ	Kyrgyzstan	Russians
LBN	Lebanon	Maronite Christians, Sunnis
MDG	Madagascar	Merina
MLI	Mali	Mande
MYS	Malaysia	Chinese
NAM	Namibia	Europeans, Basters
NER	Niger	Djerema-songhai
NGA	Nigeria	Ibo
PAK	Pakistan	Mohajirs
RUS	Russia	Avars, Kumyks
RWA	Rwanda	Tutsi
TGO	Togo	Ewe, Kabre
THA	Thailand	Chinese
TJK	Tajikistan	Russians
TKM	Turkmenistan	Russians
UGA	Uganda	Ankole, Baganda
UKR	Ukraine	Russians, Crimean Russians
UZB	Uzbekistan	Russians
ZAF	South Africa	Asians, Coloreds, Europeans, Zulus
ZAR	Congo, Dem. Rep.	Luba, Hutus, Ngbandi, Tutsi
ZWE	Zimbabwe	Europeans

wdi	Countries without MDM	wdi	Countries without MDM	wdi	Countries without MDM
AFG	Afghanistan	ETH	Ethiopia	MUS	Mauritius
AGO	Angola	FIN	Finland	MWI	Malawi
ALB	Albania	FRA	France	NIC	Nicaragua
ARE	UAE	GAB	Gabon	NLD	Netherlands
ARG	Argentina	GBR	United Kingdom	NOR	Norway
ARM	Armenia	GMB	Gambia, The	NPL	Nepal
AUS	Australia	GNB	Guinea-Bissau	NZL	New Zealand
AUT	Austria	GRC	Greece	OMN	Oman

BEL	Belgium	GTM	Guatemala	PAN	Panama
BEN	Benin	HND	Honduras	PER	Peru
BFA	Burkina Faso	HRV	Croatia	PHL	Philippines
BGD	Bangladesh	HTI	Haiti	PNG	Papua New Guinea
BGR	Bulgaria	HUN	Hungary	POL	Poland
BHR	Bahrain	IND	India	PRK	Korea North
BIH	Bosnia	IRL	Ireland	PRT	Portugal
BOL	Bolivia	IRN	Iran	PRY	Paraguay
BRA	Brazil	ISR	Israel	QAT	Qatar
BTN	Bhutan	ITA	Italy	ROM	Romania
BWA	Botswana	JAM	Jamaica	SAU	Saudi Arabia
CAF	Central African Republic	JOR	Jordan	SDN	Sudan
CAN	Canada	JPN	Japan	SEN	Senegal
CHE	Switzerland	KHM	Cambodia	SGP	Singapore
CHL	Chile	KOR	Korea, Republic of	SLE	Sierra Leone
CHN	China	KWT	Kuwait	SLV	El Salvador
CIV	Cote d`Ivoire	LAO	Laos	SOM	Somalia
COL	Colombia	LBR	Liberia	SVK	Slovakia
COM	Comoros	LBY	Libya	SVN	Slovenia
CRI	Costa Rica	LKA	Sri Lanka	SWE	Sweden
CUB	Cuba	LSO	Lesotho	SWZ	Swaziland
CYP	Cyprus	LTU	Lithuania	SYR	Syria
CZE	Czech Republic	LVA	Latvia	TCD	Chad
DEU	Germany	MAR	Morocco	TTO	Trinidad &Tobago
DJI	Djibouti	MDA	Moldova	TUN	Tunisia
DNK	Denmark	MEX	Mexico	TUR	Turkey
DOM	Dominican Rep	MKD	Macedonia	TZA	Tanzania
ECU	Ecuador	MMR	Myanmar (Burma)	URY	Uruguay
EGY	Egypt	MNG	Mongolia	USA	United States
ERI	Eritrea	MOZ	Mozambique	VEN	Venezuela
ESP	Spain	MRT	Mauritania	YEM	Yemen

Source: Minorities at Risk Project (2005)

Appendix C. Descriptive Statistics

Variable	N	mean	st. dev.	min	max
Violence					
Ethnic violence	2385	-35.67	20.48	-72	0
Ethnic tensions	2385	-3.88	1.54	-6	0
Internal conflict	2385	-8.47	2.85	-12	0
Terror events	4850	3.45	17.41	0	536
Deadly terror events	4850	1.18	6.53	0	216
Guerilla warfare	4780	0.21	0.81	0	34
Political revolutions	4780	0.21	0.54	0	9
Civil war	4798	0.05	0.22	0	1
Small communal conflict	4798	0.05	0.21	0	1
Market dominant minority					
MDM (MAR, 2005)	4726	0.22	0.41	0	1
MDM (Chua, 2003)	3289	0.54	0.50	0	1
Globalization					
KOF globalization index (total)	3717	1.85	0.85	0.38	5.42
Economic globalization	3479	3.01	1.11	0.64	6.15
Political globalization	3717	1.76	1.04	0.00	5.72
Social globalization	3717	0.84	0.88	0.01	6.25
Democracy					
polity2	4760	0.23	7.56	-10	10
polity dummy	4737	0.46	0.50	0	1
Przeworsky et al.	4247	0.38	0.49	0	1
Vanhanen	4301	0.43	0.50	0	1
Freedomhouse	4569	-4.15	2.01	-7	-1
Control variables					
ln GDP per capita	4284	7.37	1.57	4.03	10.88
Real GDP growth	4323	1.36	6.38	-50.49	89.83
Inflation	4323	61.66	616.03	-29.17	26762.02
Wage inequality	2347	0.06	0.06	0.00	1.03
Unemployment	1433	8.97	5.68	0.30	43.50
Corruption	2384	-6.42	2.62	-12	-0.17